

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

1. (Currently Amended) Spring device for a vehicle seat, comprising at least one air spring arranged between a seat part and a lower part for the height adjustment (5) of the seat part and a control device for controlling the supply and discharge of at least one additional air volume to or from the air spring, wherein the vehicle seat may have a desired comfort range of travel and two out-of-comfort ranges of travel, wherein a border is defined at the point of transition between the comfort range and each out of comfort range, where the borders between said comfort range of travel and out-of-comfort ranges each define a run in/run out position,

wherein an additional air volume is supplied to the air spring when the vehicle seat is in the comfort range of travel, and at a selectable run in/run out position (8, 9) of the air spring, the additional air volume is switched off when the vehicle seat goes from the comfort range of travel to the out-of-comfort range of travel, under control of the control device, such that the volume in which the air to be compressed is reduced in the out-of-comfort range and the inclines in the profile of a force-path air spring characteristic of the air spring in a first and in at least one further range are different from one another.
2. (Original) Spring device according to Claim 1,

c h a r a c t e r i z e d i n t h a t

in the range (3, 4) of the force-path air spring characteristic (1; 1a, 1b, 1c) the vibration-damping additional air volume that can be supplied or discharged is greater or smaller than in the first range (2) or is completely switched off.

3. (Original) Spring device according to Claim 1,
c h a r a c t e r i z e d i n t h a t
the additional air volume in the further range (3, 4) can be supplied to or discharged from the air spring in each case in a number of stages, preferably in three stages.
4. (Original) Spring device according to Claim 1,
c h a r a c t e r i z e d b y
at least one pneumatic directional control valve for supplying/discharging the additional air volume(s).
5. (Previously Presented) Spring device according to Claim 1, further comprising
the automatic height adjustment of the seat part at the start of a use operation by a user having a predefined weight wherein air is supplied to or discharged from the air spring under control of the control device such that the air spring adjusts to a central position (7) in the first range (2) of the force-path air spring characteristic (1; 1a, 1b, 1c).
6. (Previously Presented) Spring device according to Claim 5, further comprising
a regulator switch that is arranged in the region of an armrest of the vehicle seat.

7. (Original) Spring device according to Claim 1,
c h a r a c t e r i z e d i n t h a t
the first range (2) within the force-path air spring characteristic (1; 1a, 1b, 1c) can be displaced by means of an operating device by the user and by means of the control device such that the seat part is adjusted to the desired height.
8. (Previously Presented) Spring device according to Claim 1, further comprising a recognition device for recognizing a user using the vehicle seat by his weight.
9. (Original) Spring device according to Claim 1,
c h a r a c t e r i z e d i n t h a t
the additional air volume that can be supplied and discharged is greater than 0.1 l in the first range (2) of the force-path air spring characteristic (1; 1a, 1b, 1c) and is either 0.0 l or greater than 0.0 l in the further range.
10. (Original) Spring device according to Claim 1,
c h a r a c t e r i z e d b y
recognition and switching devices (8a, 9a) for recognizing the selectable run in and run out positions (8, 9) of the air spring and for switching the spring device to supply and discharge the changeable additional air volume by means of the control device.

11. (Currently Amended) Method of springing a vehicle seat, having at least one air spring arranged between a seat part and a lower part for the height adjustment (5) of the seat part, wherein the vehicle seat may have a desired comfort range of travel and two out-of-comfort ranges of travel, wherein a border is defined at the point of transition between the comfort range and each out of comfort range, where the borders between said comfort range of travel and out-of-comfort ranges each define a run in/run out position, comprising the steps of automatically controlling the supply and discharge of at least one additional air volume to or from the air spring, supplying an additional air volume to the air spring when the vehicle seat is in the comfort range of travel, and, at a selectable run in/run out position (8, 9) of the air spring, switching off the additional air volume when the vehicle seat goes from the comfort range of travel to the out-of-comfort range of travel, such that the volume in which the air to be compressed is reduced in the out-of-comfort range and the inclines in the profile of a force-path air spring characteristic of the air spring in a first and in at least one further range are different from one another.
12. (Previously Presented) Method according to Claim 11, further comprising the step of recognizing the exceeding of the predefined run in and run out position (8, 9) of the air spring.

13. (Previously Presented) Method according to Claim 12, wherein
the changeable additional air volume is supplied to the air spring only when there is
vibration, regularly and at a high frequency by the air spring moving in and out.
14. (Cancelled)
15. (Previously Presented) Method according to Claim 11, wherein
in the event of insufficient vibration damping in the end of travel regions of the air spring
with respect to a residual travel path, the changeable additional air volume is reduced
towards one end of travel until a sufficient damping of the air spring is achieved without
touching of the end of travel by an air spring lifting cylinder.